

CP 1638

PATENT
Docket No.: 21829/71 (EBC-005)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants : Wei et al.

Serial No. : 09/835,684

Cnfrm. No. : 8258

Filed : April 16, 2001

For : TREATMENT OF FRUITS OR VEGETABLES
WITH HYPERSENSITIVE RESPONSE
ELICITOR TO INHIBIT POSTHARVEST
DISEASE OR DESICCATION

Examiner:
M. Ibrahim

Art Unit:
1638

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RESPONSE TO RESTRICTION REQUIREMENT

U.S. Patent and Trademark Office
P.O. Box 2327
Arlington, VA 22202

Dear Sir:

In response to the written office action dated July 3, 2002 in which a restriction requirement was imposed by the U.S. Patent and Trademark Office ("PTO"), applicants hereby elect the subject matter of:

(i) Group I (i.e., claims 1-20 and 43-46) and

(ii) *Erwinia* hypersensitive response elicitor proteins or polypeptides,

with traverse upon the following grounds.

With respect to the restriction among Groups I-III, applicants submit that these groups of invention are sufficiently related and would require common areas of search and consideration. Applicants respectfully submit that the information provided by the PTO to support its assertion that an additional search burden exists is misplaced. For example, for Groups I and III, the asserted subclasses within class 435 have no apparent relationship to the subject matter being claimed. Class 435/subclass 6 (cited for Group I) relates to:

Involving nucleic acid: This subclass is indented under subclass 4.
Subject matter where the material to be tested or the composition in which the test is conducted contains nucleic acid or the agent used for the measurement or test contains nucleic acid

and class 435/subclass 69.1 (cited for Group III) relates to:

Recombinant DNA technique included in method of making a protein or polypeptide: This subclass is indented under subclass 41. Processes which involve the use of recombinant DNA techniques in a process of synthesis of a protein or polypeptide.

The invention of Group I contains no limitation whatsoever concerning use of a nucleic acid. The invention of Group III contains no limitation regarding how the protein or polypeptide used to treat the fruit or vegetable is made (recombinant techniques or non-recombinant techniques). In addition, there is no distinction distinguishing the protein or polypeptide used for topical treatment in claims 1 and 43 from the protein or polypeptide applied in claims 25 and 48 (although the fruit or vegetable being treated certainly differs). For these reasons, applicants submit that no burden exists to support restriction among these groups of invention.

Applicants also submit that restriction among different bacterial pathogens (i.e., other than *Phytophthora*) is improper and should be withdrawn. The present invention of Group I relates to the discovery that topical treatment of fruits or vegetables with a hypersensitive response elicitor protein or polypeptide can both inhibit postharvest disease or desiccation as well as enhance the longevity of fruit or vegetable ripeness. The claimed invention is generic to the type of hypersensitive response elicitor protein or polypeptide and restriction to an individual hypersensitive response elicitor protein or polypeptide or the several hypersensitive response elicitor proteins or polypeptides from a genus of pathogen is unwarranted.

Moreover, the various hypersensitive response elicitor proteins or polypeptides of bacterial pathogens are known to fall within an art recognized class which is characterized by the following characteristics: glycine rich, heat stable, hydrophilic, capable of inducing a hypersensitive response in tobacco after recombinant expression, susceptible to proteolysis, and substantially lacking in cysteine. See U. Bonas, "Bacterial Home Goal by Harpins," Trends Microbiol. 2: 1-2 (1994)("Bonas I"), attached hereto at Exhibit 1; U. Bonas, "*hrp* Genes of Phytopathogenic Bacteria," Current Topics in Microbiology and Immunology 192: 79-98 (1994)("Bonas II"), attached hereto as Exhibit 2; and G. Preston, et. al., "The HrpZ Proteins of *Pseudomonas syringae* pvs. *syringae*, *glycinea*, and *tomato* are Encoded by an Operon Containing *Yersinia ysc* Homologs and Elicit the Hypersensitive Response in


Tomato but not Soybean," MPMI 8(5): 717-32 (1995)("Preston"), attached hereto as Exhibit 3. Therefore, although the hypersensitive response elicitor proteins of bacterial pathogens may differ one from another in amino acid sequence, they share these fundamental characteristics which define their class. Moreover, as claimed they all share the same function and same effect when used to treat fruits or vegetables, namely the inhibition of postharvest disease or desiccation as well as enhancing the longevity of fruit or vegetable ripeness.

Finally, the PTO has ignored the Manual of Patent Examining Procedure rules governing the handling of generic or linking claims. See MPEP § 809. Claim 1 is not limited to any one particular hypersensitive response elicitor protein or polypeptide. As such, claim 1 is a generic linking claim that links together the subject matter of claims 10-17. According to MPEP § 809.03, claims to a genus which link together claims to species should specifically be designated as linking claims at the time the restriction is made. As linking claims, they also should not be associated with any one of the linked groups. MPEP § 814. Where linking claims are involved, allowance of a linking claim would provide for rejoinder of all linked claims to species. MPEP § 809.03. Likewise, claim 43 is generic and not limited to any one particular hypersensitive response elicitor protein or polypeptide. Thus, claim 43 should be treated as recited in MPEP § 809.02(d) and no restriction shall be required with respect to this generic claim.

In view of all of the foregoing, applicants submit that the restriction requirement should be withdrawn with respect to Groups I-III or, at a minimum, Groups I and III. Even absent such withdrawal, restriction among the different bacterial pathogens is improper and should be withdrawn.

Respectfully submitted,

Date: July 23, 2002


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